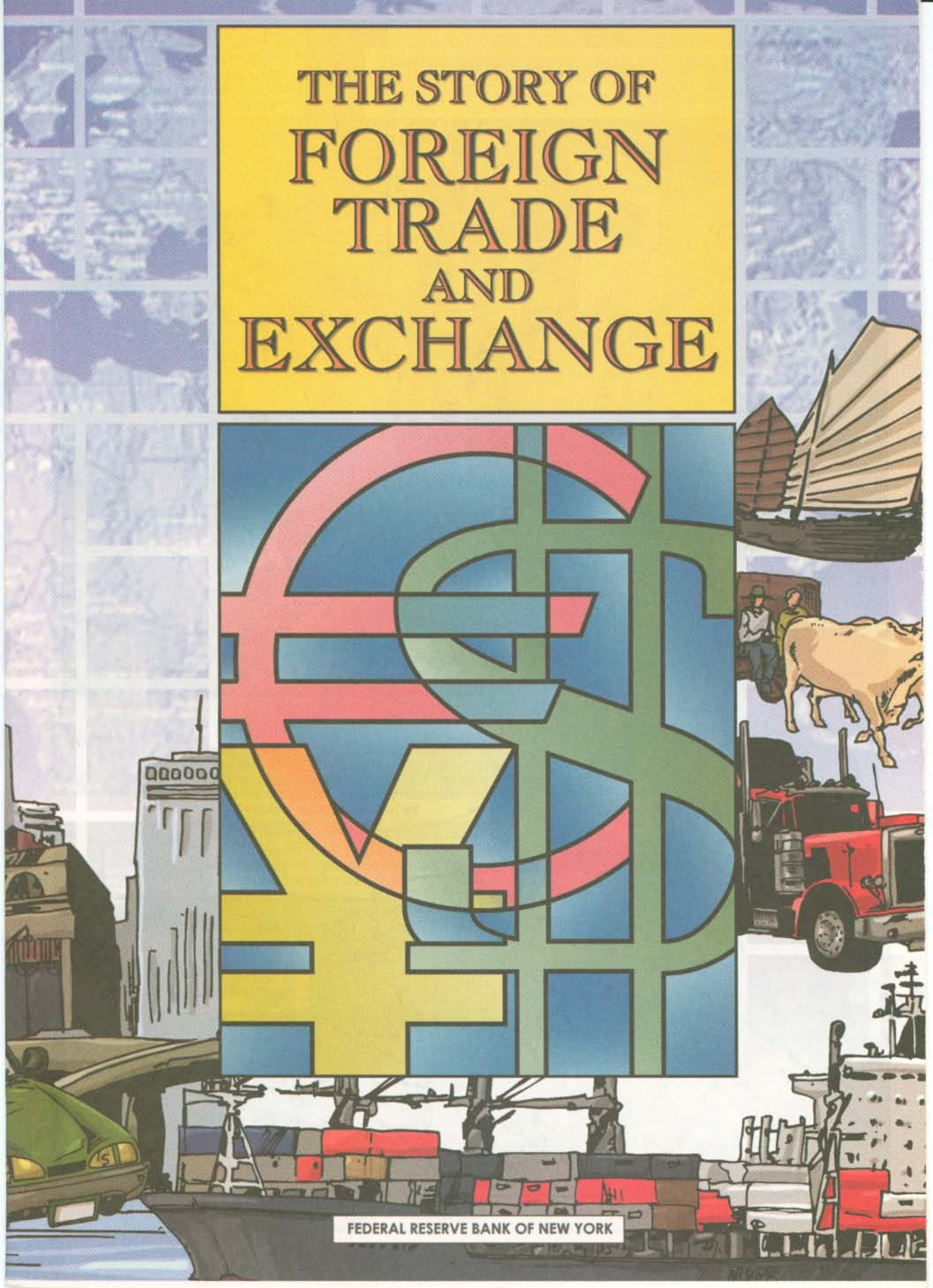
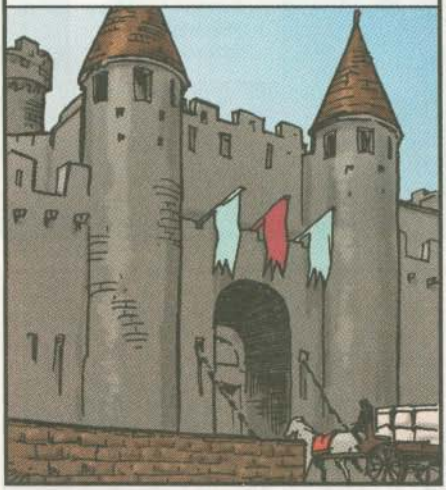
THE STORY OF FOREIGN TRADE AND EXCHANGE

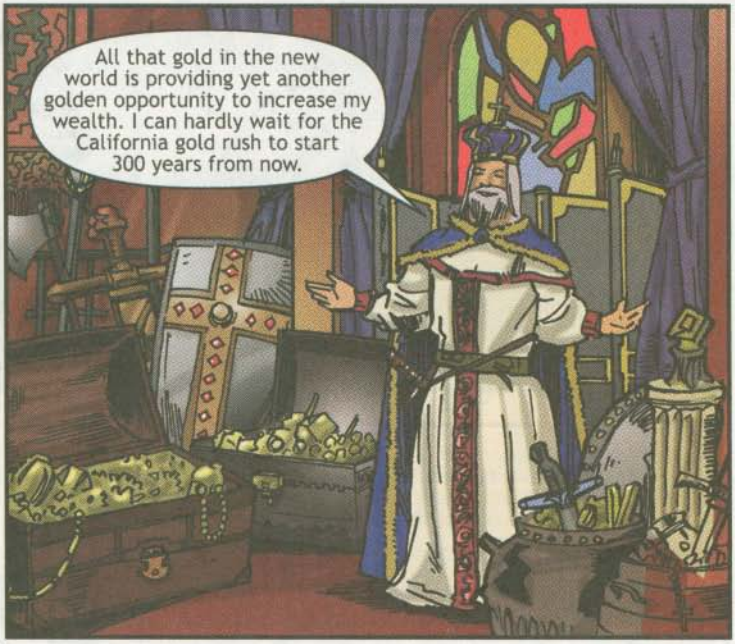


FEDERAL RESERVE BANK OF NEW YORK

Many of the products you use everyday, like your CD player and TV set, were not designed or manufactured in the United States. Why do you have the opportunity to buy and use so many foreign products?
Story by Cedric Fan
Revised by Steve Malin and Radhika Mithal
Art by Jesse Chen
BUSINESS NEWS
The reason is that the United States trades goods and services with many other nations. Trading practices have changed greatly over the years, so we'll start this story by looking at trade history.
~WORLD · TRADE~
After stagnating for several hundred years, the volume of foreign trade increased rapidly in the early 1500s.

The European nations, dominant at that time, pursued an economic philosophy called mercantilism. Mercantilism consisted of two main ideas. The first was that precious metals determined a nation's wealth.



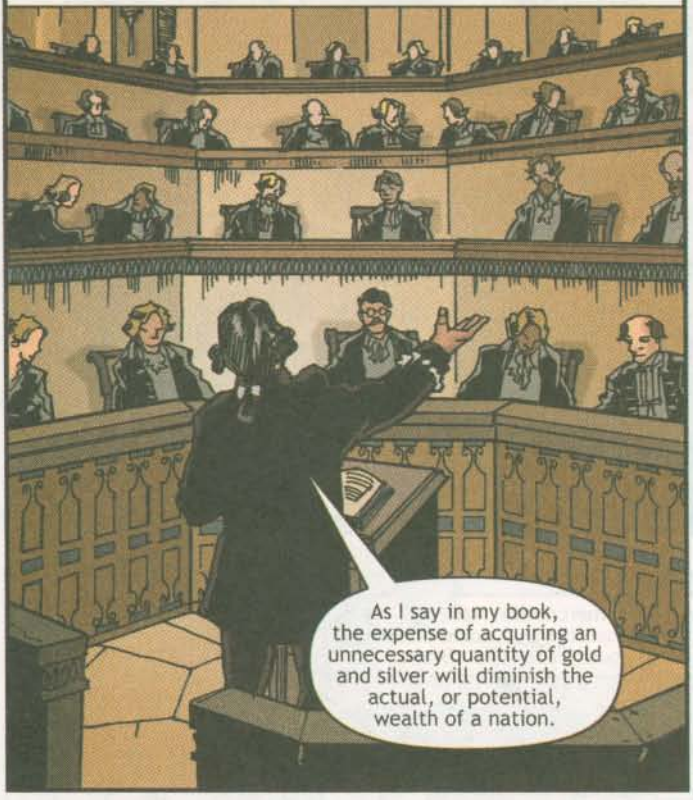

All that gold in the new world is providing yet another golden opportunity to increase my wealth. I can hardly wait for the California gold rush to start 300 years from now.

The second mercantilist idea, directly related to the first, was that countries should export more than they import.
During the mercantilist era, exports were sold for gold and silver, so a nation exporting more than it imported would continuously increase its wealth.
We must find new foreign markets for our products so that our supply of gold and silver will increase.

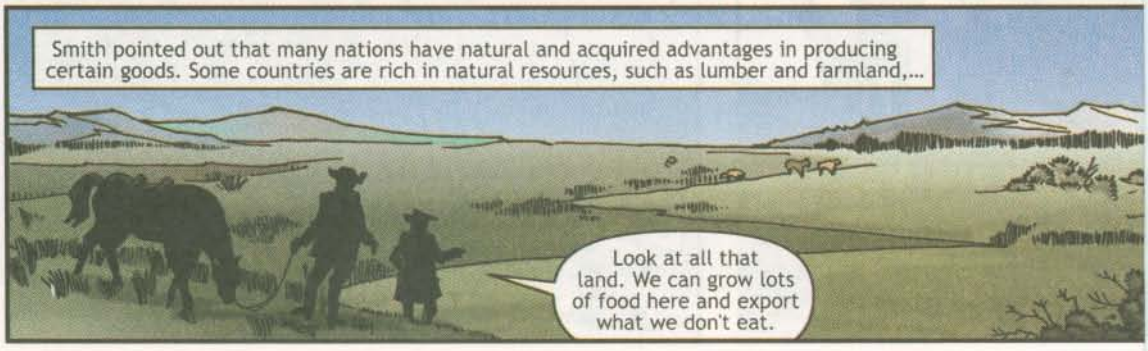
To export more than they import, mercantilist nations focused on finding new natural resources that could be processed and manufactured into goods fit for sale abroad.
COLONIES
JOLLY OL' ENGLAND
You seem to have extra time on your hands these days.

The mercantilist philosophy was challenged by the publication of Adam Smith's *The Wealth Of Nations* in 1776.

Smith did not share the mercantilists' belief that a country's wealth was determined by precious metals. He believed a nation's wealth ultimately was determined by its holdings of assets, such as household items that consumers desired.

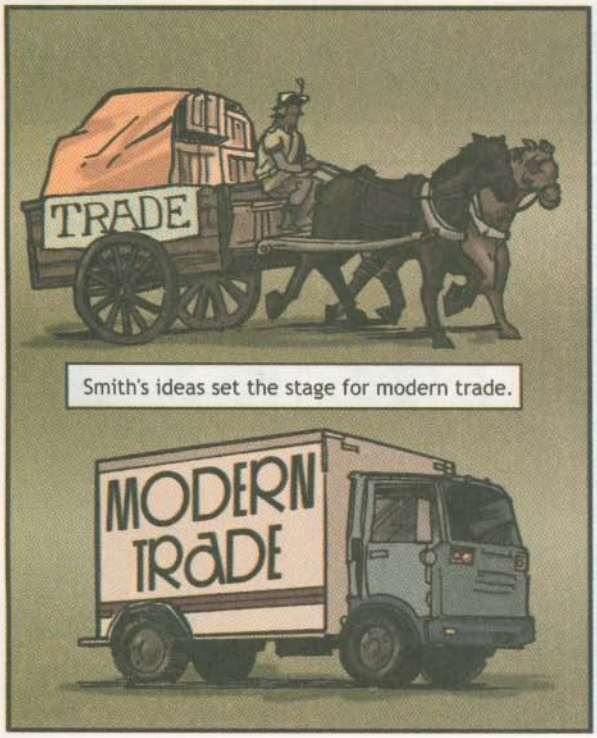

As I say in my book, the expense of acquiring an unnecessary quantity of gold and silver will diminish the actual, or potential, wealth of a nation.

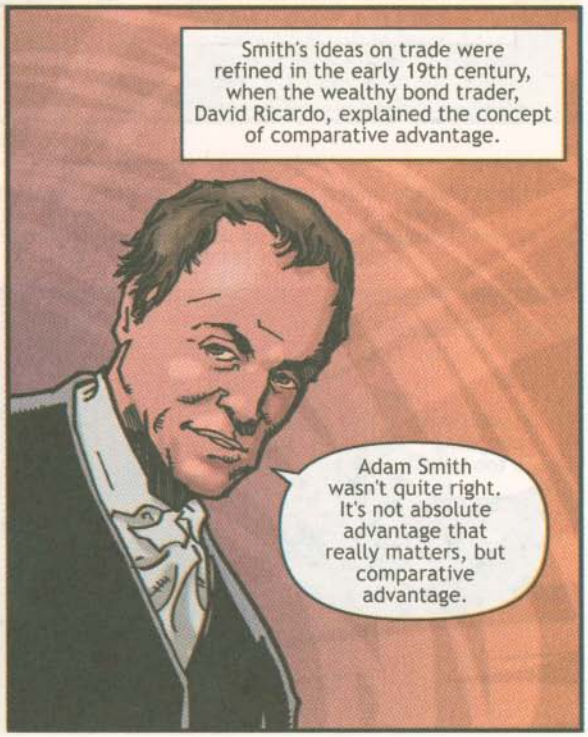
Smith argued that nations should export the surplus of what they were best at producing, and use the proceeds of the export sales to import what they were less good at producing. Only then would the true wealth of nations increase.


Smith pointed out that many nations have natural and acquired advantages in producing certain goods. Some countries are rich in natural resources, such as lumber and farmland,...
Look at all that land. We can grow lots of food here and export what we don't eat.

... and others in acquired resources, such as a highly trained workforce and a large technology base. These countries have an advantage in producing goods such as silicon chips, because chip manufacturing requires skilled workers and technologically advanced machines.

These natural and acquired advantages led Smith to introduce the principle of absolute advantage.
A country has an absolute advantage in the production of a good or service when it can produce that output more cheaply than any other country. If countries specialize in producing the good in which they have an absolute advantage, they can trade what they don't need and be better off economically.


TRADE
Smith's ideas set the stage for modern trade.
MODERN TRADE


Smith's ideas on trade were refined in the early 19th century, when the wealthy bond trader, David Ricardo, explained the concept of comparative advantage.
Adam Smith wasn't quite right. It's not absolute advantage that really matters, but comparative advantage.

Ricardo showed that when two nations have different relative abilities to produce different goods, trade will benefit both nations.

If two countries have different resources and skills, they will have different relative abilities to produce different goods. Both countries will be better off by specializing in what they produce most efficiently and trading what they don't need domestically.

A simple example will illustrate the concept of comparative advantage. Let's assume that the United States and a mythical country we'll call Jeansland both produce blue jeans and compact discs.

Now, suppose it takes 1 hour to make a CD and 2 hours to make a pair of blue jeans in the United States, while it takes 4 hours to make a CD and 4 hours to make a pair of jeans in Jeansland.

	HOURS PER GOOD	
	1 CD	1 PAIR JEANS
UNITED STATES	1	2
JEANSLAND	4	4

Note that the United States has an absolute advantage in producing both goods. That is, it takes the United States fewer hours than Jeansland to manufacture either a pair of jeans or a CD.

Because the United States has an absolute advantage in producing both goods, you might think that only the United States would benefit from trade. In fact, both nations will benefit from trade because Jeansland and the United States have different *relative* abilities to produce CDs and jeans.

Since it takes 1 hour to make a CD in the United States and 4 hours in Jeansland, U.S. workers are four times as efficient as Jeansland workers in making CDs. Because it take 2 hours to make a pair of jeans in United States and 4 hours in Jeansland, U.S. workers are only two times as efficient as Jeansland workers in making jeans. Thus we say that U.S. workers are relatively more efficient in the production of CDs than in the production of jeans.

In the time it takes my friend in Jeansland to make 1 CD, I can make 4. In the time it take him to make 1 pair of jeans, I can make 2.

Alternatively, because it takes 4 hours to make a pair of jeans in Jeansland and 2 hours in the United States, Jeansland workers are ½ as efficient as U.S. workers in making jeans, and because it takes 4 hours to make a CD in Jeansland and 1 hour in the United States, Jeansland workers are only ¼ as efficient as U.S. workers in making CDs. Therefore, Jeansland workers are relatively more efficient in the production of jeans than in the production of CDs.

In the time it takes my American friend to make 1 full pair of jeans, I can make ½ a pair. In the time it takes him to make 1 CD, I can make only ¼ of a CD.

Since Jeansland is relatively more efficient in making jeans, Jeansland has a comparative advantage in the production of jeans.

Because the United States is relatively more efficient in producing CDs, the United States has a comparative advantage in the production of CDs.

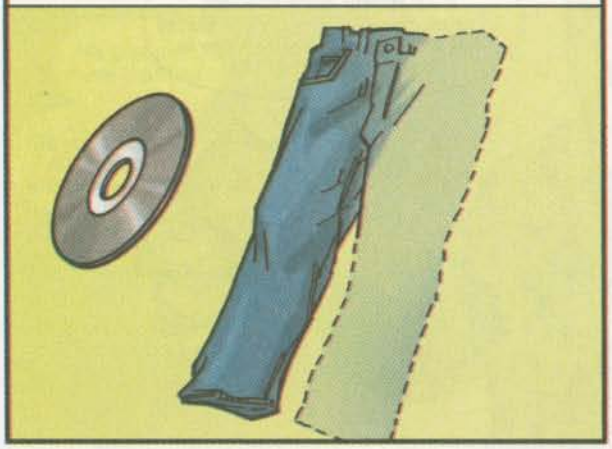
Comparative advantage can also be described in terms of opportunity costs. An opportunity cost is what you give up to do something else.

WHAT I DID	WHAT I COULD HAVE DONE
WORK 2 HOURS AT $8 AN HOUR	WORK 2 HOURS AT $10 AN HOUR
DEPOSIT $1,000 IN BANK X FOR ONE YEAR AT 5% INTEREST	DEPOSIT $1,000 IN BANK Y FOR ONE YEAR AT 8% INTEREST
SLEEP TWO HOURS	BABYSIT TWO HOURS AT $10 AN HOUR

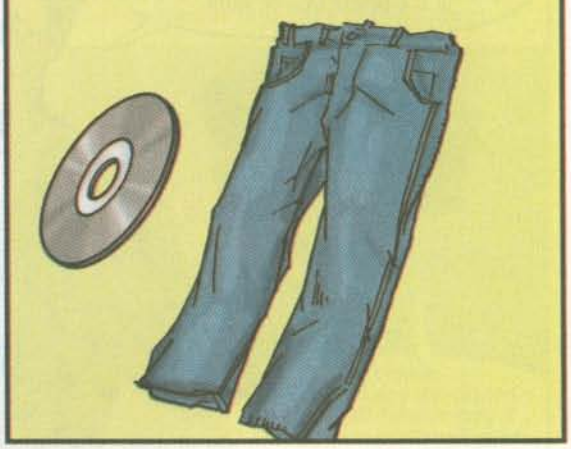
For example, if I decide to sleep, then I would forego the $20 I could have earned by babysitting.

Similarly, if I earn 5% on my savings at Bank X instead of 8% at Bank Y, I forego 3% of my interest. On a one-year, $1,000 CD, that's $30.

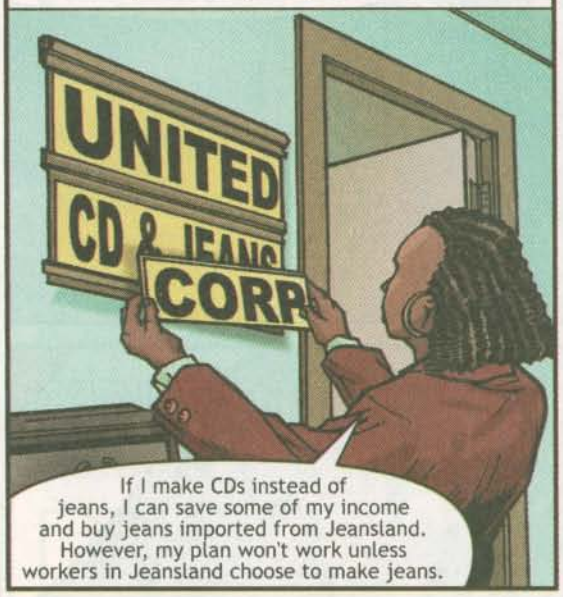
Opportunity cost is the basis of comparative advantage. To see how, suppose U.S. workers at first produce only CDs. Producing 1 CD fewer frees 1 hour, with which an American can make ½ pair of jeans.



In Jeansland, producing 1 CD fewer frees 4 hours, which can be used to make 1 pair of Jeans.



Because the opportunity cost of making a CD is lower in the United States (1/2 pair of jeans) than in Jeansland (a full pair of jeans), Americans have a comparative advantage in making CDs. Similarly, Jeansland has a comparative advantage in making jeans. Can you figure out why?

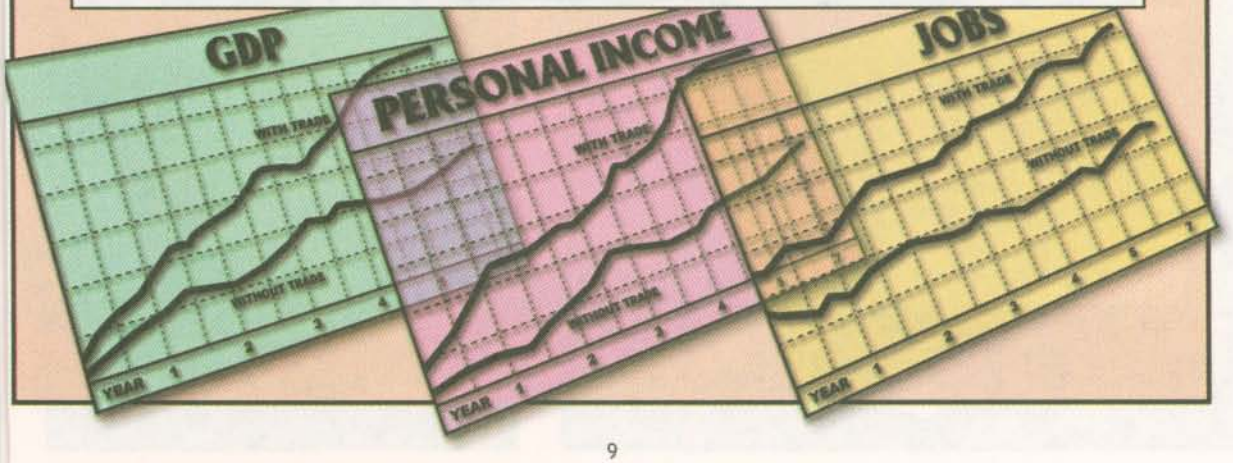

UNITED
CD & JEANS
CORP
If I make CDs instead of jeans, I can save some of my income and buy jeans imported from Jeansland. However, my plan won't work unless workers in Jeansland choose to make jeans.

That's right. Jeansland has a comparative advantage in making jeans because the opportunity cost of making a pair of jeans is lower in Jeansland (1 CD) than in the United States (2 CDs).

If Jeanslanders trade jeans for CDs they're trading the good they can produce relatively more efficiently for the good they produce relatively less efficiently.

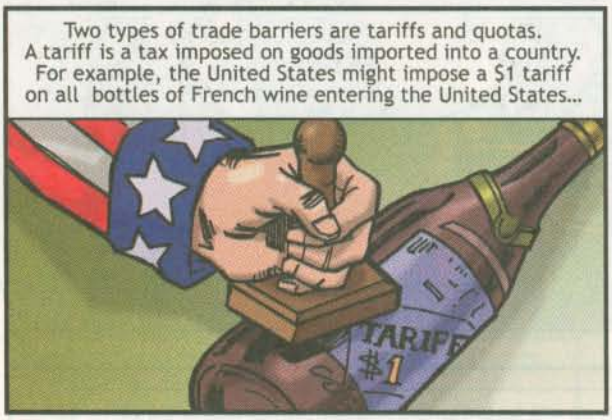
This must be better than the initial situation, in which Jeansland produced both goods. Likewise, the United States must also be better off under trade based on comparative advantage.

If all nations exploit their comparative advantages, all will be better off and the standard of living of each nation will rise. Gross domestic product (GDP), the value of goods and services produced in a country, will increase and new jobs will be created in industries that have a comparative advantage.

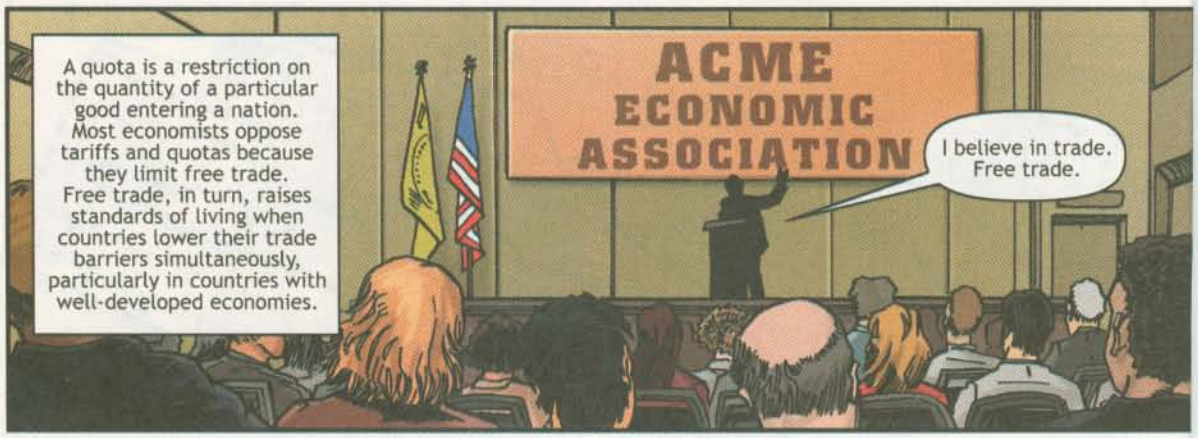


It should be noted that the Jeansland/United States example is a great simplification of what happens in the real world.
In the real world, countries never completely specialize in the production of one or a few goods, but underlying economic factors related to comparative advantage do lead to concentration in the production of certain goods.
Thus, our example yields valuable insight into the reasons nations trade.

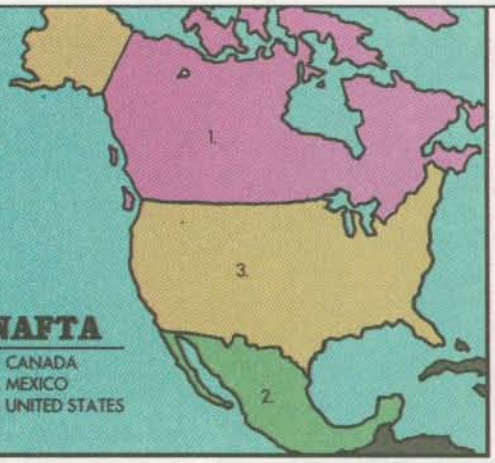
The important point is that countries are better off when they exploit their comparative advantages. What happens, though, when countries have trade barriers?
U.S.
FRANCE
GOODS


Two types of trade barriers are tariffs and quotas. A tariff is a tax imposed on goods imported into a country. For example, the United States might impose a $1 tariff on all bottles of French wine entering the United States...
TARIFF
#1

... and France might impose a 1 euro tariff on all U.S. compact discs entering France.
TARIF
1 EURO


A quota is a restriction on the quantity of a particular good entering a nation. Most economists oppose tariffs and quotas because they limit free trade. Free trade, in turn, raises standards of living when countries lower their trade barriers simultaneously, particularly in countries with well-developed economies.
ACME
ECONOMIC
ASSOCIATION
I believe in trade. Free trade.

Several blocs of nations have attempted to lower trade barriers between their members. For example, Mexico, Canada, and the United States ratified the North American Free Trade Agreement (NAFTA) in 1993, sharply reducing tariffs and easing quotas on goods and services traded within the bloc. Another bloc that has done this is the European Union (EU).



On a broader scale, the World Trade Organization (WTO), created in 1995 by the Uruguay Rounds of negotiations, promotes free trade and works to lower trade barriers in all nations simultaneously. The WTO serves as a forum for its 146 member countries to establish, negotiate, and monitor trade agreements.

There are some reasons why countries might elect not to remove all barriers. One is that countries want to have domestic suppliers of products vital to national security, so they won't have to rely on foreign suppliers during wartime.

Another is that many countries want to develop their new and struggling industries. Some people say that these new industries need the protection of trade barriers in order to mature into industries able to compete in the world market.

So, you're telling me you need trade barriers until you're well established making airplanes?
Yes, we haven't had time to work out all our manufacturing problems.

A third reason is that while free trade tends to make a country as a whole better off, this doesn't mean that all its population will be made better off. When countries specialize in production according to comparative advantage, some workers will lose their jobs. This will lead to temporary, or possibly permanent, unemployment for some people.

Returning to our United States/Jeansland example: If, suddenly, Jeansland CD makers lose their jobs because of competition from the United States, and U.S. jeans makers lose their jobs because of competition from Jeansland, there might be some unpleasant short-term problems if the workers can't be retrained quickly for new jobs in a different industry.

The displacement of workers can constitute a political and economic problem. This is a major reason why no nation is calling for an immediate lifting of all trade barriers.

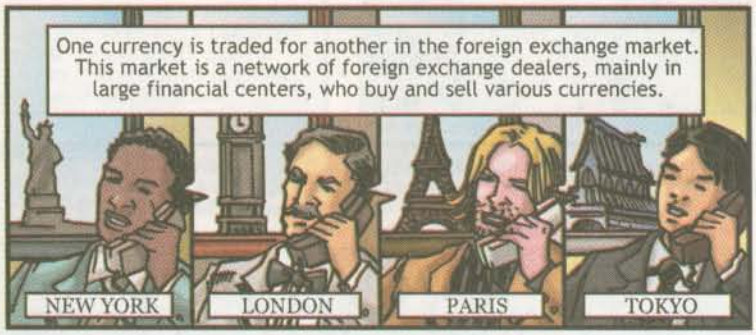
To minimize the hardship on workers, countries lower trade barriers slowly, so that with enough time, workers can be retrained for new jobs and share in the benefits of free trade.

...and the Labor Department reported today that unemployment is inching down. In related news, the Commerce Department reported that incomes continued their upward trend.
EVENING NEWS

FOREIGN EXCHANGE
So far, we haven't discussed how trade actually takes place. We have simply assumed that countries would specialize in what they are relatively most efficient at producing, and then somehow trade.

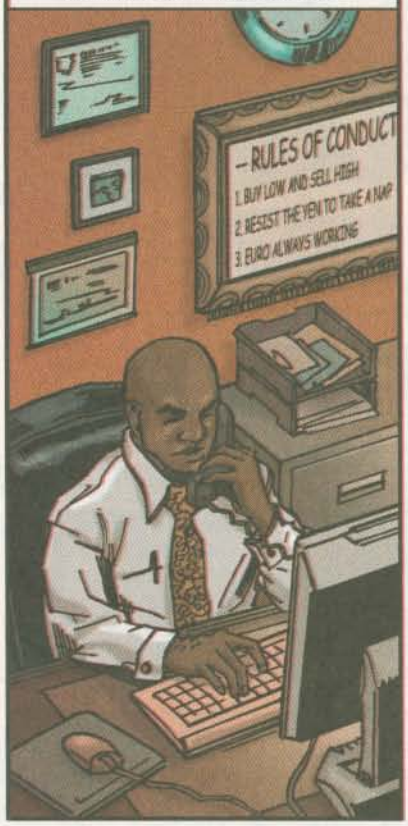
But countries don't usually trade items for other items. For example, a United States exporter of compact discs wants to be paid in U.S. dollars, not blue jeans.
Sorry, but payment is due in U.S. dollars only.

To examine how countries actually trade goods and services, we have to introduce money. Most countries have their own currency. The United States has the dollar, Japan, the yen. Some countries have a common currency, such as the euro.


One currency is traded for another in the foreign exchange market. This market is a network of foreign exchange dealers, mainly in large financial centers, who buy and sell various currencies.
NEW YORK
LONDON
PARIS
TOKYO

Over $1.5 trillion are traded daily in foreign exchange transactions worldwide.
1,500,000,000,000
Wow! Some people have a yen for trading!

Foreign exchange dealers, linked by telephones and computers, stand ready to list prices at which they will buy and sell different currencies. The dealers earn profits by buying currencies at one price and selling them at slightly higher prices.

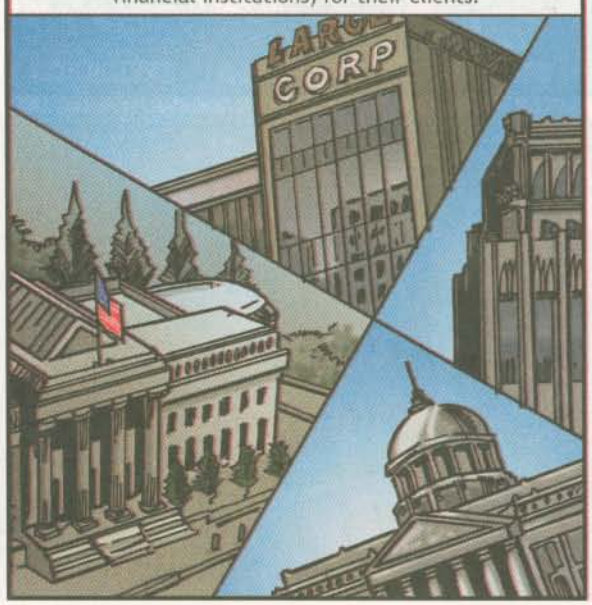


For example, while a dealer might be willing to pay 10.90 pesos per dollar, the dealer might ask for a price of 11.20 per dollar from someone wanting to buy dollars.

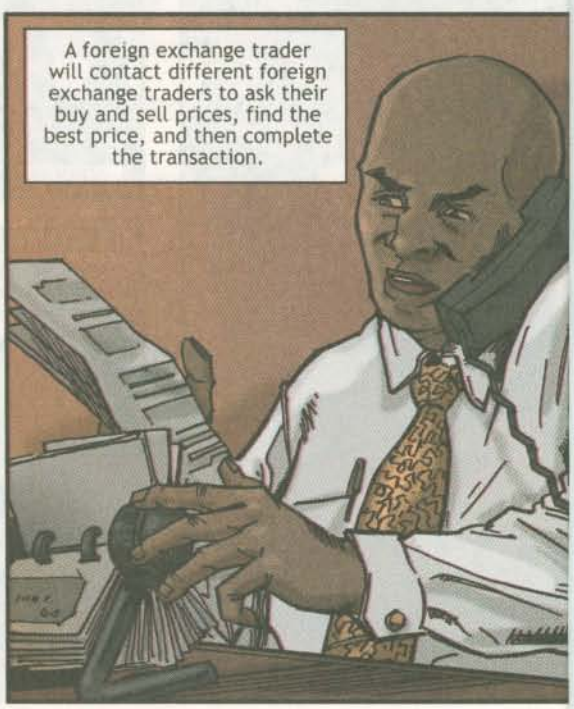
The difference between the price of 10.90 pesos and price of 11.20 pesos is my profit.

The rate at which one currency is traded for another is known as the exchange rate. An exchange rate listed in the United States is usually expressed in terms of how many units of a foreign currency one U.S. dollar can buy. The Mexican peso exchange rate, for example, might be 10.9 pesos per dollar. Exceptions include the euro and the U.K. pound sterling, which are expressed in dollars per unit of these currencies.

Large corporations, financial institutions, and government agencies need to trade large amounts of currencies on a regular basis, either for themselves or (in the case of the financial institutions) for their clients.



A foreign exchange trader will contact different foreign exchange traders to ask their buy and sell prices, find the best price, and then complete the transaction.



Large companies and institutions trade in a wholesale environment. That is, traders buy in large amounts and tend to get the best prices available for the different currencies. This is similar to joining a wholesale food club, where buying in bulk decreases the per unit cost.

In contrast, individuals and small companies, who have smaller foreign exchange needs, operate in a retail environment. As with any retail service, they have to pay a somewhat higher price. In other words, they receive a less favorable exchange rate.

A tourist, for example, usually exchanges currency at a financial institution, typically a local bank.
MEXICAN BANK
FOREIGN EXCHANGE (ROOM 25)

The bank is offering the tourist a valuable service.
TRAVEL NE
CURRENCY TRADING RATES
$US 1.00
PESO 10.98
The newspaper listing says the exchange rate is 10.98 pesos per dollar, but at the bank I got only 10.90 pesos per dollar.

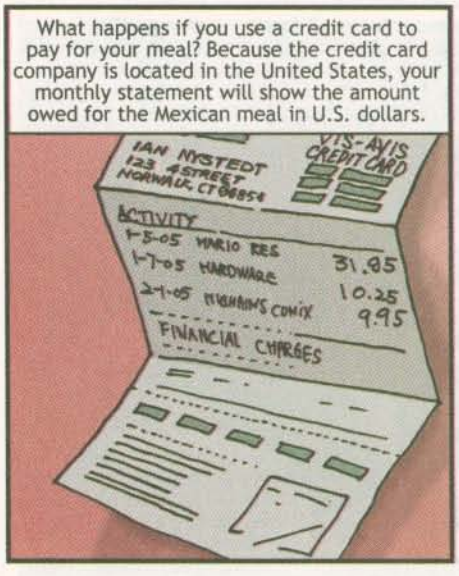
The reason the retail foreign exchange (FX, for short) customer gets a less favorable rate is that retail transactions are usually small and involve paper currency, rather than electronic money, so they're relatively expensive to execute.
In the time it will take me to count this money, I could execute a dozen electronic FX transactions for much larger sums.

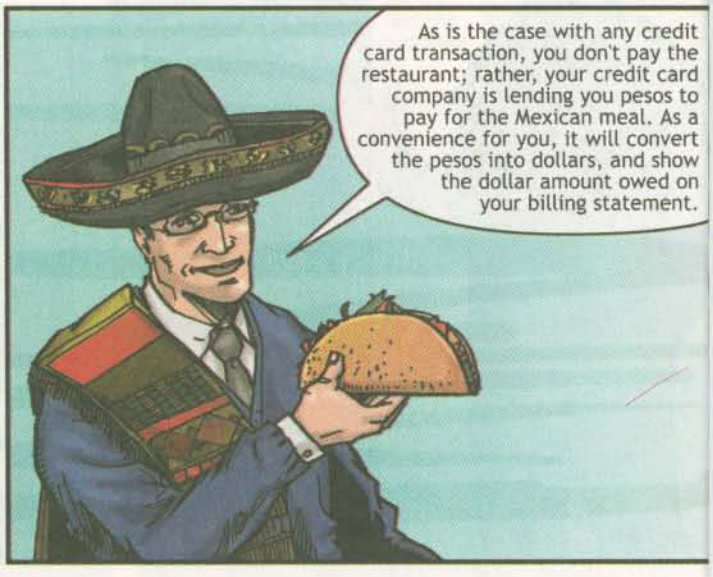
To understand why foreign exchange is important, suppose you're a tourist in a foreign country, say, Mexico. You get off the plane and head to a nice restaurant because you're hungry.
TEL
RESTAURANTE DE MARIO
FDNY

At the end of the big meal, you have to pay.
Eh-hem
FDNY

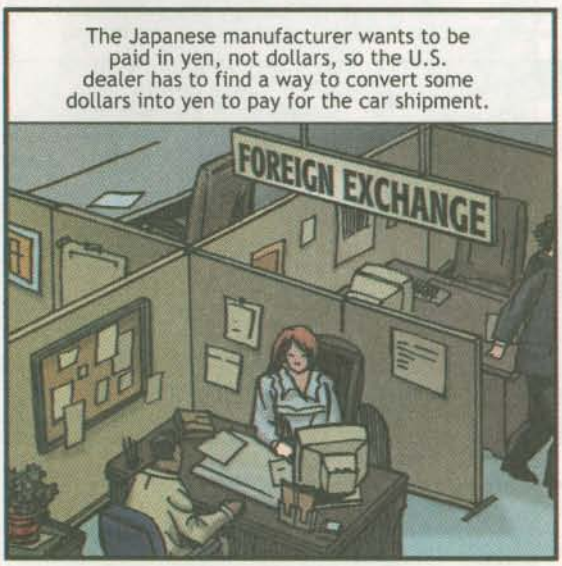
How do you do it? U.S. dollars won't work; the restaurant wants 300 pesos.
We don't accept greenbacks.
That's a switch. You're giving me a tip.

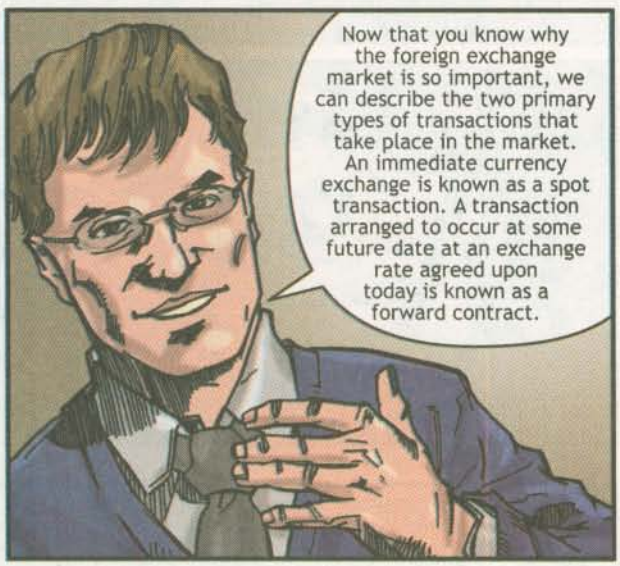
Fortunately, you had changed dollars into pesos at the airport bank, and you can pay for your meal.
PESOS
Maravilloso!


What happens if you use a credit card to pay for your meal? Because the credit card company is located in the United States, your monthly statement will show the amount owed for the Mexican meal in U.S. dollars.
IAN NYSTEDT
123 A STREET
NORWALK, CT 06854
VIS-AVIS CREDIT CARD
ACTIVITY
1-5-05 MARIO RES 31.85
1-7-05 HARDWARE 10.25
2-1-05 HIGGINS COMIX 9.95
FINANCIAL CHARGES


As is the case with any credit card transaction, you don't pay the restaurant; rather, your credit card company is lending you pesos to pay for the Mexican meal. As a convenience for you, it will convert the pesos into dollars, and show the dollar amount owed on your billing statement.

Most FX transactions take place because people in one country want to buy real and financial assets in another country.
Some transactions simply take place because speculators are guessing that the currency they're buying will appreciate over the short run and they can sell it later for a profit.
TOKYO TRANSP
Businesses that import goods also need to exchange currency. A U.S. car dealer importing Japanese cars has to find a way to pay the Japanese manufacturer for the cars.
How am I going to pay for this shipment?


The Japanese manufacturer wants to be paid in yen, not dollars, so the U.S. dealer has to find a way to convert some dollars into yen to pay for the car shipment.
FOREIGN EXCHANGE

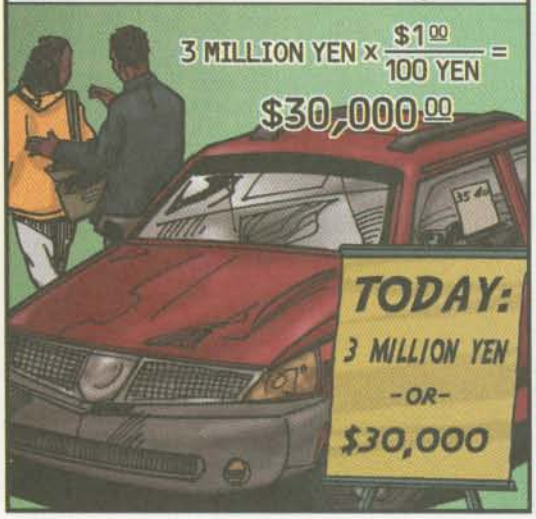

Now that you know why the foreign exchange market is so important, we can describe the two primary types of transactions that take place in the market. An immediate currency exchange is known as a spot transaction. A transaction arranged to occur at some future date at an exchange rate agreed upon today is known as a forward contract.

To understand the usefulness of forward contracts, we can use the U.S. importer of Japanese cars as an example. Suppose that the importer's next shipment of cars is due in one month.
JAPAN
MY CARS
PACIFIC OCEAN
U.S.

To pay for the cars, the U.S. importer must find a way to pay the Japanese car maker in yen in one month. Suppose that the exchange rate is now 120 yen to the dollar and each car costs 3 million yen. How many dollars is this? We compute as follows: (3 million yen) x ($1/120 yen) = $25,000.

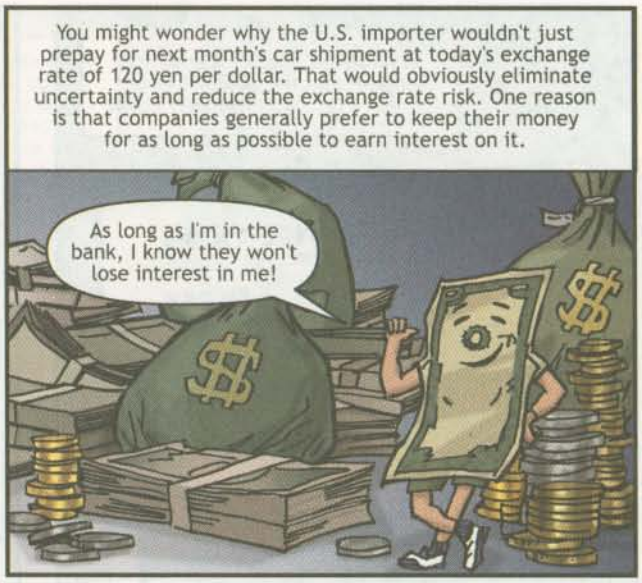
Now suppose that a month later the exchange rate is 100 yen per dollar. What does this mean? At an exchange rate of 120 yen per dollar, $1 will buy 120 yen. At an exchange rate of 100 yen per dollar, $1 will buy 100 yen. Because the dollar buys fewer yen at the new exchange rate, we say that the dollar has weakened, or depreciated.

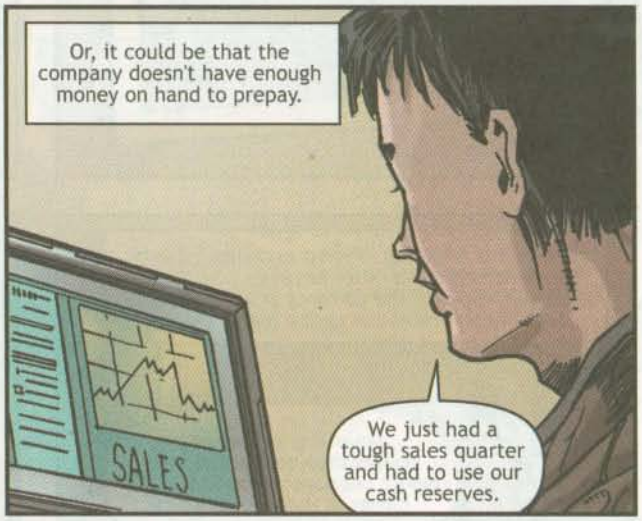
Because the dollar has weakened, it now takes more dollars to equal 3 million yen. How many more? The new exchange rate is 100 yen per dollar, so 3 million yen will be worth (3 million yen) x ($1/100 yen) = $30,000. Thus the car is $5,000 more expensive in dollar terms than it was a month ago.

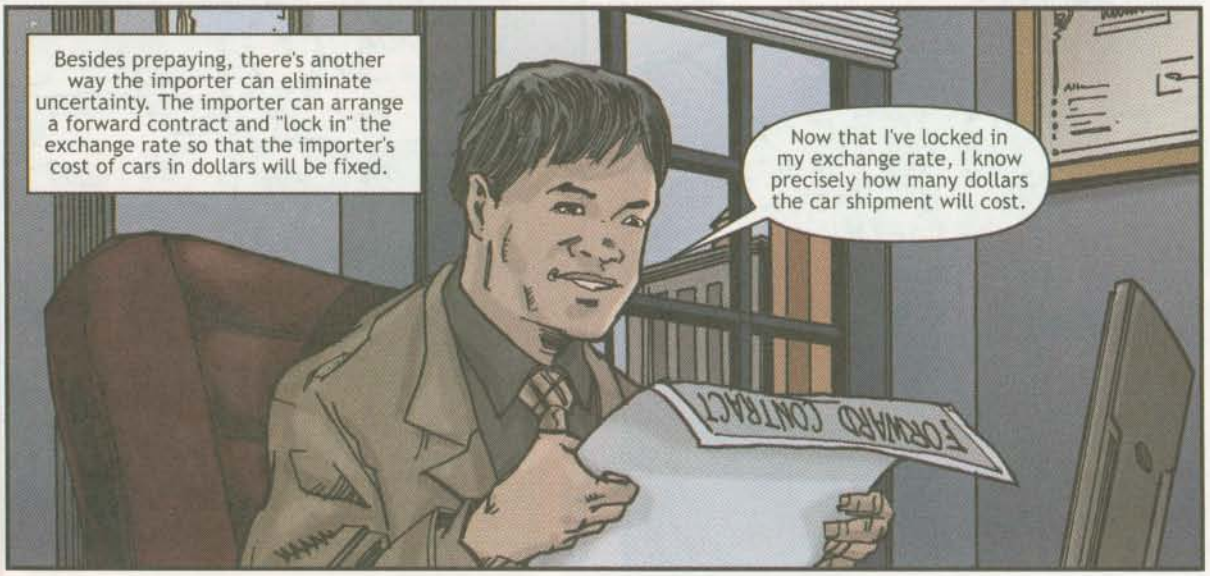


Of course, the reverse could also happen. The exchange rate might increase to 150 yen per dollar. In this case, we say the dollar has strengthened, or appreciated, against the yen, because $1 now buys more yen than before. The precise dollar amount of the change is computed as follows: (3 million yen) x ($1/150 yen) = $20,000, a decrease of $5,000

The importer faces exchange rate risk, because in a month, the 3 million yen might be worth more or less than the current $25,000. This uncertainty makes it difficult to make a business plan.
I can't know for sure how many cars I'll want to import unless I know what the price will be in dollars.


You might wonder why the U.S. importer wouldn't just prepay for next month's car shipment at today's exchange rate of 120 yen per dollar. That would obviously eliminate uncertainty and reduce the exchange rate risk. One reason is that companies generally prefer to keep their money for as long as possible to earn interest on it.
As long as I'm in the bank, I know they won't lose interest in me!


Or, it could be that the company doesn't have enough money on hand to prepay.
SALES
We just had a tough sales quarter and had to use our cash reserves.


Besides prepaying, there's another way the importer can eliminate uncertainty. The importer can arrange a forward contract and "lock in" the exchange rate so that the importer's cost of cars in dollars will be fixed.
Now that I've locked in my exchange rate, I know precisely how many dollars the car shipment will cost.
FORWARD CONTRACT

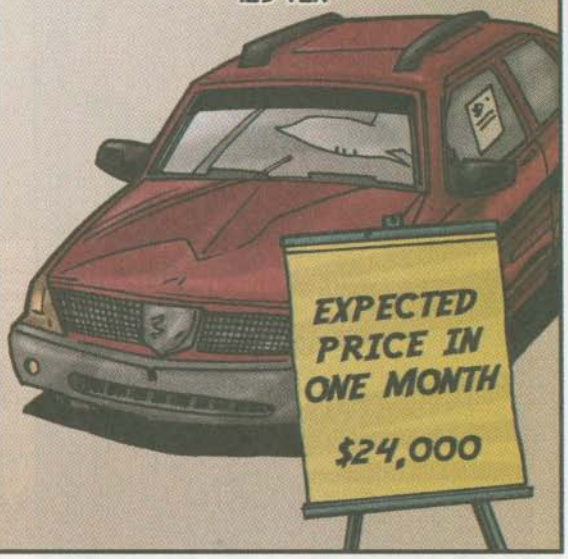
To illustrate a forward contract, suppose that the 30-day forward exchange rate is 125 yen per dollar.

FOREIGN EXCHANGE RATES
(UNITS OF FOREIGN CURRENCY PER DOLLAR)

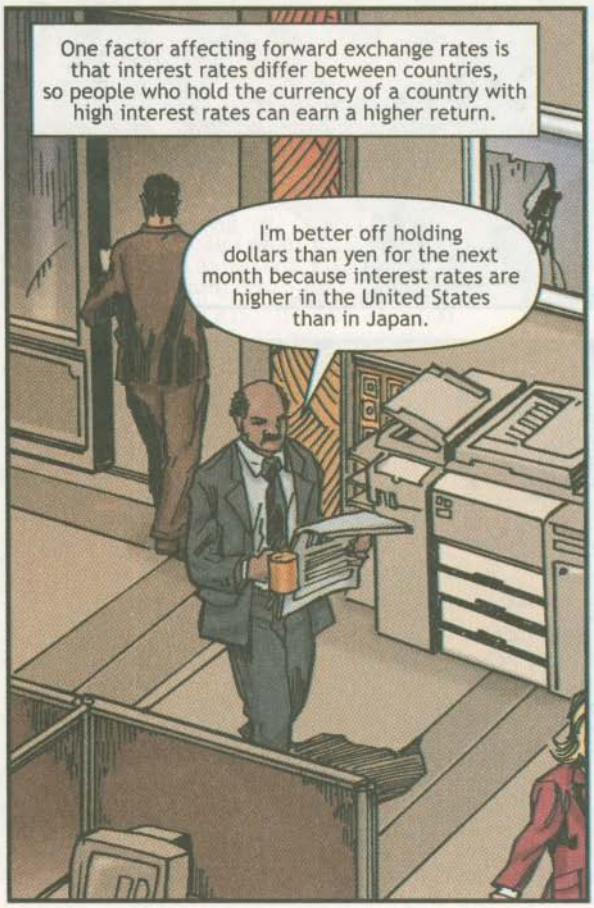
	SPOT RATE	30-DAY FORWARD
BRITISH POUND	0.54	0.53
CANADIAN DOLLAR	1.31	1.32
EURO	0.91	0.90
JAPANESE YEN	122.50	125.00
SWISS FRANC	1.29	1.31

Because the car importer has access to forward contracts, the expected cost of the 3 million yen needed to pay the Japanese car maker in one month is $24,000.

$$3 \text{ MILLION YEN} \times \frac{\$1^{00}}{125 \text{ YEN}} = \$24{,}000^{00}$$



One factor affecting forward exchange rates is that interest rates differ between countries, so people who hold the currency of a country with high interest rates can earn a higher return.


I'm better off holding dollars than yen for the next month because interest rates are higher in the United States than in Japan.

Indeed, if interest rates are higher in the United States than in Japan, the likelihood increases that the dollar will strengthen relative to the yen.

Other factors such as inflation expectations and economic conditions of a country, influence the value of its currency.

The U.S. importer may arrange a forward contract through a large bank. The bank agrees to sell 3 million yen to the U.S. importer, in one month's time, at a forward exchange rate of 125 yen per dollar. The import company is effectively paying the bank to assume some of its exchange rate risk.

MR. BANKER

The car importer has managed to reduce his business risk because he knows with certainty how much the cars will cost in one month's time.

If the exchange rate increases or decreases, it won't affect the importer's purchasing costs, since his exchange rate has already been determined in the forward contract.

You should keep in mind that forward exchange rates are not precise forecasts of future exchange rates. Therefore, locking in a forward exchange rate creates some risk for a company because it may have locked in an unfavorable rate.

I hope I didn't lock in an unfavorable rate.

For example, if the actual exchange rate in one month is higher than 125 yen per dollar, the U.S. company would have benefited by not entering into the forward contract because the price per car is now less than $24,000.

I would have done better by waiting to buy the yen.

FORWARD CONTRACT

RATE: 125 YEN

EXPECTED/CONTRACT PRICE: $24,000

CURRENT PRICE: $23,000

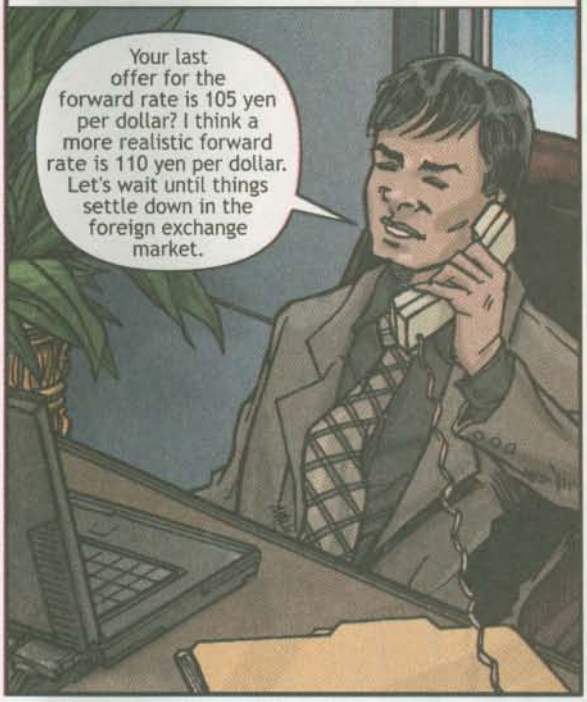
Some monetary authorities (central banks and finance ministries) are also actively involved in the foreign exchange market. They try to maintain stability in the marketplace for currencies, so that international trade can take place unimpeded.

The monetary authorities of countries whose currencies aren't traded in large quantities in the FX market can directly affect supply and demand conditions for the currencies.
The krown has been falling in value. Let's buy some krowns to pump up its value.

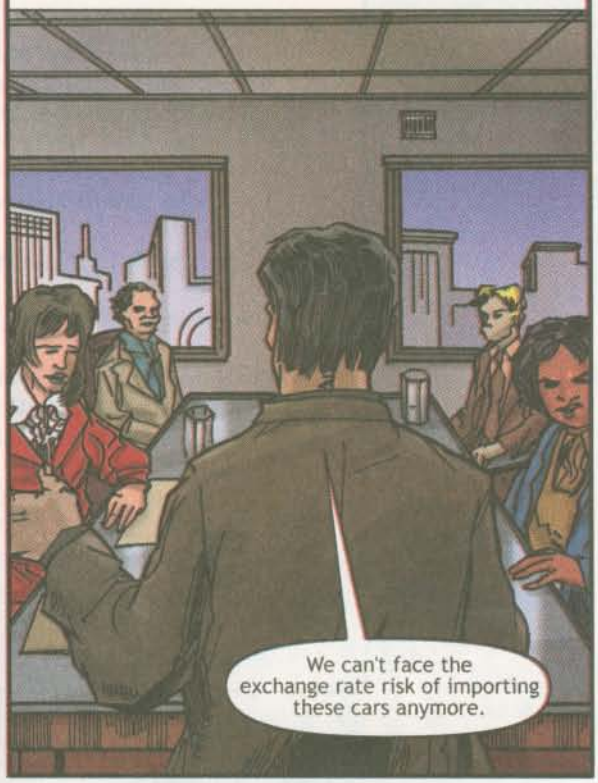
For a country such as the United States, whose currency is actively traded in the FX market, central bank FX intervention is more likely to influence market sentiment than to alter demand and supply conditions for the dollar.
The Federal Reserve has been buying dollars. It must want the value of the dollar to be higher than it is.

Although there is no absolute rule determining when central banks might intervene, sharp and rapid exchange rate fluctuations unrelated to underlying economic conditions are signs that the central banks might take action.

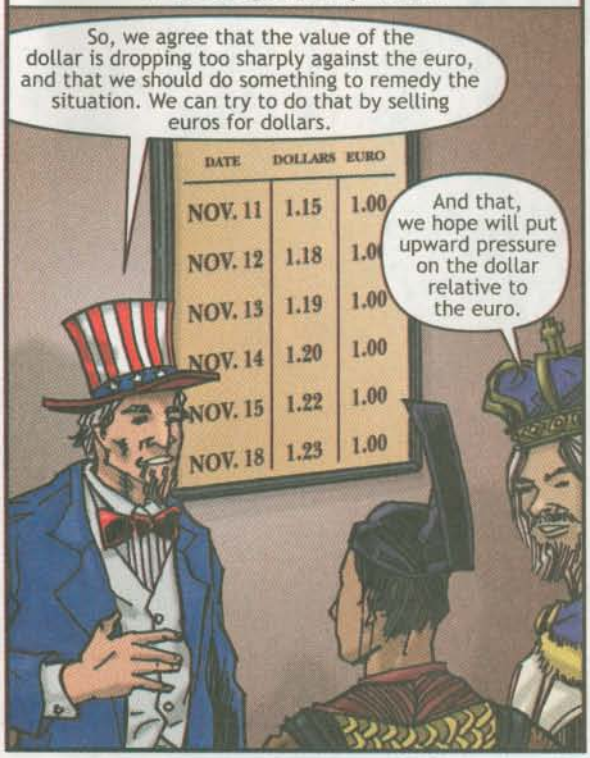
A disorderly foreign exchange market can lead to economic instability. With increased fluctuation in exchange rates, it becomes more difficult and expensive to agree to market transactions, and companies may be unwilling to make commitments in foreign currencies. As a result, trade can suffer.


Your last offer for the forward rate is 105 yen per dollar? I think a more realistic forward rate is 110 yen per dollar. Let's wait until things settle down in the foreign exchange market.

Some companies may curtail importing, reducing the benefits of comparative advantage.



The world's major central banks sometimes combine efforts to try to maintain stability in the foreign exchange market.


So, we agree that the value of the dollar is dropping too sharply against the euro, and that we should do something to remedy the situation. We can try to do that by selling euros for dollars.
DATE DOLLARS EURO
NOV. 11 1.15 1.00
NOV. 12 1.18 1.0
NOV. 13 1.19 1.00
NOV. 14 1.20 1.00
NOV. 15 1.22 1.00
NOV. 18 1.23 1.00
And that, we hope will put upward pressure on the dollar relative to the euro.

Foreign trade and exchange are growing rapidly. For example, U.S. imports of goods and services now equal more than 14 percent of the annual output of the U.S. economy, up from 4 percent 35 years ago. International trade will continue to grow rapidly as markets become more global, and the growth of trade will continue to raise living standards in most of the world.

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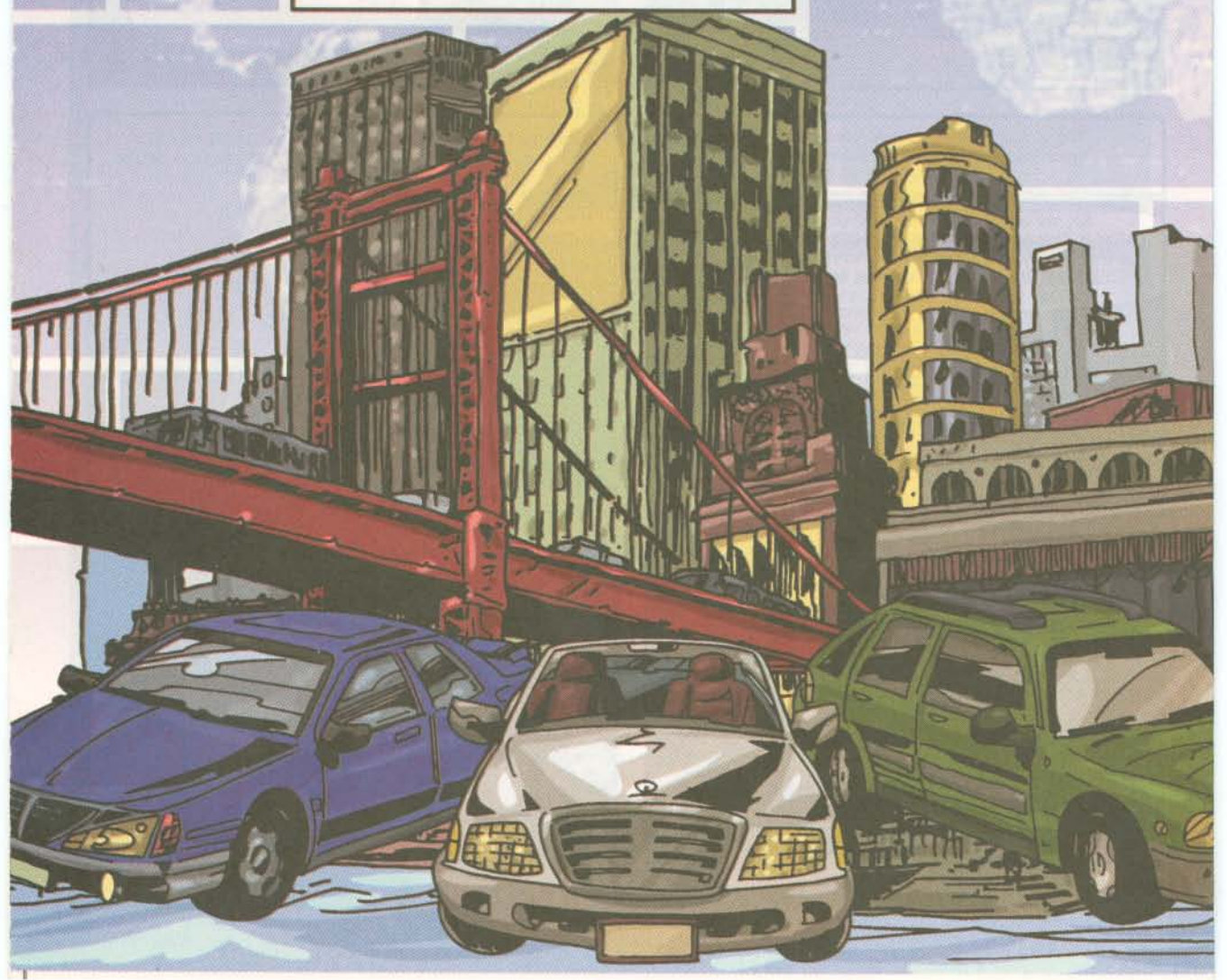
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